



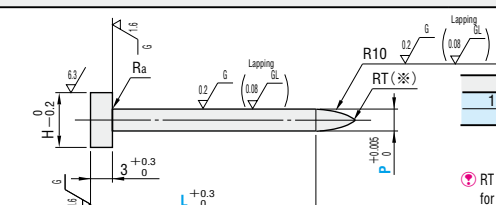


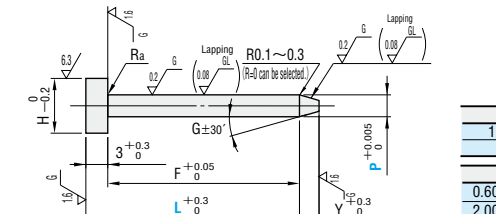


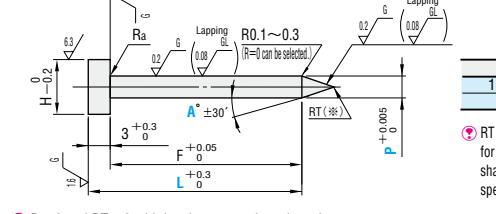
CARBIDE STRAIGHT PILOT PUNCHES FOR FIXING TO STRIPPER PLATES


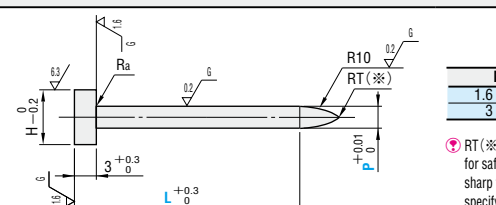

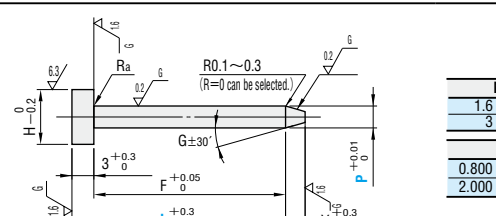

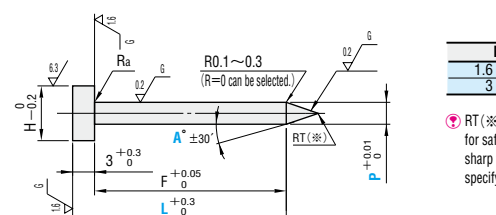
CARBIDE STRAIGHT PILOT PUNCHES FOR FIXING TO STRIPPER PLATES

—TiCN COATING—

PRODUCTS DATA

P.1604

Type	Material	Catalog No.	Shape												
—Tip R type—  —Tip R·lapping— 	V30 (HIP) 88~89HRA	WSPT Lapping L—WSPT	 <table border="1"> <tr><th>No.</th><th>Ra</th></tr> <tr><td>1.6 ~ 2.5</td><td>≤0.2</td></tr> <tr><td>3 ~ 6</td><td>≤0.5</td></tr> </table> <p>RT (※) → Tip is rounded for safety. To keep the sharp tip (no rounding), specify RT=0.</p> <p>For the length of tip R, refer to the products data "Punch R length". P.1592</p> <p>RT=0 with lapping cannot be selected.</p> <p>Although the marks of processing may remain in the center of a Shank end face, it is satisfactory on a function.</p>	No.	Ra	1.6 ~ 2.5	≤0.2	3 ~ 6	≤0.5						
No.	Ra														
1.6 ~ 2.5	≤0.2														
3 ~ 6	≤0.5														
—Tapered tip type—  —Tapered tip, lapping— 	V30 (HIP) 88~89HRA	WTPT Lapping L—WTPT	 <table border="1"> <tr><th>No.</th><th>Ra</th></tr> <tr><td>1.6 ~ 2.5</td><td>≤0.2</td></tr> <tr><td>3 ~ 6</td><td>≤0.5</td></tr> </table> <table border="1"> <tr><th>P</th><th>G</th></tr> <tr><td>0.600 ~ 1.999</td><td>10°</td></tr> <tr><td>2.000 ~</td><td>15°</td></tr> </table> <p>R=0 with lapping cannot be selected.</p> <p>Although the marks of processing may remain in the center of a Shank end face, it is satisfactory on a function.</p>	No.	Ra	1.6 ~ 2.5	≤0.2	3 ~ 6	≤0.5	P	G	0.600 ~ 1.999	10°	2.000 ~	15°
No.	Ra														
1.6 ~ 2.5	≤0.2														
3 ~ 6	≤0.5														
P	G														
0.600 ~ 1.999	10°														
2.000 ~	15°														
—Sharp tip angle type—  —Sharp tip angle·lapping— 	V30 (HIP) 88~89HRA	WAPT Lapping L—WAPT	 <table border="1"> <tr><th>No.</th><th>Ra</th></tr> <tr><td>1.6 ~ 2.5</td><td>≤0.2</td></tr> <tr><td>3 ~ 6</td><td>≤0.5</td></tr> </table> <p>RT (※) → Tip is rounded for safety. To keep the sharp tip (no rounding), specify RT=0.</p> <p>R=0 and RT=0 with lapping cannot be selected.</p> <p>Although the marks of processing may remain in the center of a Shank end face, it is satisfactory on a function.</p>	No.	Ra	1.6 ~ 2.5	≤0.2	3 ~ 6	≤0.5						
No.	Ra														
1.6 ~ 2.5	≤0.2														
3 ~ 6	≤0.5														

Type	Material	Catalog No.	Shape												
—Tip R type— 	V30 (HIP) 88~89HRA Surface 3000HV	H—WSPT	 <table border="1"> <tr><th>No.</th><th>Ra</th></tr> <tr><td>1.6 ~ 2.5</td><td>≤0.2</td></tr> <tr><td>3 ~ 6</td><td>≤0.5</td></tr> </table> <p>RT (※) → Tip is rounded for safety. To keep the sharp tip (no rounding), specify RT=0.</p> <p>For the length of tip R, refer to the products data "Punch R length". P.1592</p> <p>Although the marks of processing may remain in the center of a Shank end face, it is satisfactory on a function.</p>	No.	Ra	1.6 ~ 2.5	≤0.2	3 ~ 6	≤0.5						
No.	Ra														
1.6 ~ 2.5	≤0.2														
3 ~ 6	≤0.5														
—Tapered tip type— 	V30 (HIP) 88~89HRA Surface 3000HV	H—WTPT	 <table border="1"> <tr><th>No.</th><th>Ra</th></tr> <tr><td>1.6 ~ 2.5</td><td>≤0.2</td></tr> <tr><td>3 ~ 6</td><td>≤0.5</td></tr> </table> <table border="1"> <tr><th>P</th><th>G</th></tr> <tr><td>0.800 ~ 1.999</td><td>10°</td></tr> <tr><td>2.000 ~</td><td>15°</td></tr> </table> <p>Although the marks of processing may remain in the center of a Shank end face, it is satisfactory on a function.</p>	No.	Ra	1.6 ~ 2.5	≤0.2	3 ~ 6	≤0.5	P	G	0.800 ~ 1.999	10°	2.000 ~	15°
No.	Ra														
1.6 ~ 2.5	≤0.2														
3 ~ 6	≤0.5														
P	G														
0.800 ~ 1.999	10°														
2.000 ~	15°														
—Sharp tip angle type— 	V30 (HIP) 88~89HRA Surface 3000HV	H—WAPT	 <table border="1"> <tr><th>No.</th><th>Ra</th></tr> <tr><td>1.6 ~ 2.5</td><td>≤0.2</td></tr> <tr><td>3 ~ 6</td><td>≤0.5</td></tr> </table> <p>RT (※) → Tip is rounded for safety. To keep the sharp tip (no rounding), specify RT=0.</p> <p>Although the marks of processing may remain in the center of a Shank end face, it is satisfactory on a function.</p>	No.	Ra	1.6 ~ 2.5	≤0.2	3 ~ 6	≤0.5						
No.	Ra														
1.6 ~ 2.5	≤0.2														
3 ~ 6	≤0.5														

Catalog No.	Type	No.	0.1mm increments L	0.001mm increments min. P max.	A	Y	H
(Tip R type) WSPT	(Tapered tip type) WTPT	(Sharp tip angle type) WAPT	1.6	0.600 ~ 1.600	(10)	(1)	2.6
			2.0	1.000 ~ 2.000			3
			2.5	1.500 ~ 2.500			3.5
			3	2.000 ~ 3.000			5
			4	3.000 ~ 4.000			7
			5	4.000 ~ 5.000			8
			6	5.000 ~ 6.000			9

P Price **Quotation**

Order **Catalog No.** — **L** — **P** — **A** — (RT=0 / R=0)
 WAPT 6 — 25.0 — P5.99 — A30 — RT0—R0
 WTPT 6 — 20.0 — P5.020

Days to Ship **Quotation**

Alterations **Catalog No.** — **L** — **P** — **A(AC)** — **(R)** — **(RT)** — (HC-TC, etc.)
 WAPT 6 — 20.0 — P5.020 — AC18

Alterations to tip	Code	Tip R type	Tapered tip and sharp tip angle types	1Code
RLC	RLC	Tip R is cut flat. Allowable range of change $2 \leq RLC < \sqrt{P(10-P/4)}$ 0.1mm increments		
AC	AC	Tip angle change $15^\circ < AC \leq 45^\circ$ 1° increments Cannot be used for tapered tip types.		
PKC	PKC	Tip diameter tolerance change $P + 0.005$ \Rightarrow $+0.003$ \Rightarrow 0		

Alterations to tip	Code	Tip R type	Tapered tip and sharp tip angle types	1Code
PKV	PKV	Tip diameter tolerance change $P + 0.005$ \Rightarrow ± 0.002		
YC	YC	Tip taper length change - If $P < 2.0$, $1 \leq YC \leq P \times 2.83 - 0.3$ - If $P \geq 2.0$, $1 \leq YC \leq P \times 1.86 - 0.3$ L (LC) + YC \leq Lmax. + 8 0.1mm increments Cannot be used for sharp tip angle types.		
HC	HC	$P \leq HC < H$ 0.1mm increments		
KC	KC	Addition of single key flat to head		
WKC	WKC	Addition of double key flats in parallel		
TC	TC	Head thickness change $2 \leq TC < 3$ 0.1mm increments (If combined with TKC-TKM, 0.01mm increments can be selected.) The full length remains as specified.		
TKC	TKC	Head thickness tolerance change $T + 0.3$ \Rightarrow $+0.02$ \Rightarrow 0		
TKM	TKM	Head thickness tolerance change $T + 0.3$ \Rightarrow 0 \Rightarrow -0.02		

Catalog No.	Type	No.	0.1mm increments L	0.01mm increments min. P max.	A	Y	H
H—WSPT		1.6	10.0 ~ 32.0	1.00 ~ 1.60	(10)	1	2.6
		2.0		1.00 ~ 2.00			
		2.5		1.50 ~ 2.50			
H—WTPT		3	10.0 ~ 40.0	2.00 ~ 3.00	2	5	7
		4		3.00 ~ 4.00			
		5		4.00 ~ 5.00			
		6		5.00 ~ 6.00			

P Price **Quotation**

A (10) → P < 2.00 If P ≥ 2.00, A=10 cannot be selected.
 If used with PKC alteration, P dimension can be selected in 0.001mm increments.

Order **Catalog No.** — **L** — **P** — **A** — (RT=0 / R=0)
 H—WAPT 6 — 25.0 — P5.99 — A30 — RT0
 H—WSPT 6 — 20.0 — P5.02 — RT0

Days to Ship **Quotation**

Alterations **Catalog No.** — **L** — **P** — **A(AC)** — **(R)** — **(RT)** — (HC-TC, etc.)
 H—WAPT 6 — 20.0 — P5.02 — AC18

Alterations to tip	Code	Tip R type	Tapered tip and sharp tip angle types	1Code
RLC	RLC	Tip R is cut flat. Allowable range of change $2 \leq RLC < \sqrt{P(10-P/4)}$ 0.1mm increments		
AC	AC	Tip angle change $15^\circ < AC \leq 45^\circ$ 1° increments Cannot be used for tapered tip types.		
PKC	PKC	Tip diameter tolerance change $P + 0.01$ \Rightarrow $+0.005$ \Rightarrow 0		

Alterations to tip	Code	Tip R type	Tapered tip and sharp tip angle types	1Code
PKV	PKV	Tip diameter tolerance change $P + 0.01$ \Rightarrow ± 0.005		
YC	YC	Tip taper length change - If $P < 2.0$, $1 \leq YC \leq P \times 2.83 - 0.3$ - If $P \geq 2.0$, $1 \leq YC \leq P \times 1.86 - 0.3$ L (LC) + YC \leq Lmax. + 8 0.1mm increments Cannot be used for sharp tip angle types.		
SC	SC	Tip roughness change The base material is finished before the coating is applied. RT=0 and R=0 cannot be selected.		
HC	HC	$P \leq HC < H$ 0.1mm increments		
KC	KC	Addition of single key flat to head		
WKC	WKC	Addition of double key flats in parallel		
TKC	TKC	Head thickness tolerance change $T + 0.3$ \Rightarrow $+0.02$ \Rightarrow 0		
TKM	TKM	Head thickness tolerance change $T + 0.3$ \Rightarrow 0 \Rightarrow -0.02		